



**INNOVATION.CA**

CANADA FOUNDATION  
FOR INNOVATION

FONDATION CANADIENNE  
POUR L'INNOVATION

# Innovation is in our nature

ANNUAL REPORT 2015-16



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## Message from the chair and the president & CEO

### Innovation is in our nature

The Canada Foundation for Innovation (CFI) was built on the ideals of thinking big and investing in areas that matter to Canadians.

Since its creation in 1997, the CFI has ensured Canadian researchers have the tools they need to push the frontiers of knowledge in all disciplines and to contribute to the full spectrum of research — from discovery to technology development. This has allowed our brightest minds to contribute to better health outcomes, a cleaner, greener environment, evidence-based policy-making and the competitiveness of Canadian businesses.

The CFI began with a visionary investment from the Government of Canada, and for almost 20 years, it has been funding state-of-the-art research infrastructure — labs, facilities, equipment — at universities, colleges and research hospitals across the country.

These investments are now paying dividends. Just as investments in roads, bridges and other infrastructure create jobs and help stimulate the economy in our cities and towns, investments in research infrastructure attract bright minds from around the world and help stimulate new, innovative ideas that lead to discoveries and improve the quality of life for Canadians.

The investment of \$1.33 billion that was announced by the Government of Canada at the beginning of 2015-16 will ensure that we continue to put ideas to work. Following an extensive consultation with our stakeholders, we have launched new competitions which will see new investments flow to institutions to spark cutting-edge research that will benefit the country.

We also announced significant funding throughout the year from previous budget allocations. For example, we invested \$333 million in transformative research infrastructure under our Innovation Fund and \$60.7 million from the John R. Evans Leaders Fund to attract and retain the best researchers in the world. We provided additional funding in support of advanced digital research infrastructure including data management. Colleges are working more closely with industry to help develop strong collaborations through the College-Industry Innovation Fund.

Over the past two decades, the Government of Canada has made important investments in world-class research facilities in many disciplines including physics, astronomy, health, ocean and arctic research which have contributed to making Canada a global leader in science and technology development. In November 2015, the CFI convened a discussion with an international group of senior managers of big science facilities to explore how Canada could best support its own large-scale research projects in a structured way that is based on a rigorous merit review and focused on national science priorities.

CFI funding helps build the foundation that supports Canada's position in the global innovation race. It provides the tools researchers need to spark game-changing discoveries. It creates the spaces where researchers gather to collaborate with private-sector partners to improve products and processes.

But our greatest contribution to innovation is, without a doubt, the thousands of students and post-doctoral fellows who are trained every year on CFI-funded facilities and who gain the skills they need to become the next generation of researchers and innovators. Canada's future lies in the hands of this group, who graduate with the advanced knowledge, technical skills, collaboration experience and, in many cases, entrepreneurial ambitions to succeed and contribute to Canada's prosperity and well-being.



**Kevin P. D. Smith**  
Chair, Board of Directors



**Gilles G. Patry**  
President & CEO

## World-class research infrastructure is what we provide

Researchers cannot do world-class research without world-class research infrastructure. The Canada Foundation for Innovation was created in 1997 to fund the state-of-the-art tools essential for conducting leading-edge research in the 21st century.

The CFI supports the evolving needs of Canada's universities, colleges and research hospitals across all areas of research — from health and medicine, to the natural sciences and engineering, to the social sciences and humanities — by funding state-of-the-art equipment, laboratories and facilities.

### SUPPORTING RESEARCH IS THE REASON WHY

According to our 2015 contribution agreement with the Government of Canada, the CFI's objectives are to:

- ▶ Support economic growth and job creation, as well as health and environmental quality through innovation;
- ▶ Increase Canada's capability to carry out important world-class scientific research and technology development;
- ▶ Expand research and job opportunities by providing support through research infrastructure for the development of highly qualified personnel; and,
- ▶ Promote productive networks and collaboration among Canadian universities, colleges, research hospitals, non-profit research institutions and the private sector.

### A SMART FUNDING MODEL IS HOW WE DO IT

The CFI maximizes the funding it receives from the Government of Canada by contributing up to 40 percent of a project's research infrastructure costs. Institutions secure the remaining 60 percent through partnerships with provincial governments and other public, private and non-profit organizations.

This means the more than \$6.7 billion invested by the Government of Canada through the CFI has been leveraged into a total investment of close to \$15.9 billion in research infrastructure in Canadian institutions since the CFI was created.

### ALWAYS WITH AN EYE TOWARD EXCELLENCE

The CFI has a well-established, rigorous, competitive and independent merit-review process that rewards research excellence. We rely on experts from around the world to ensure that only the best projects are funded. CFI funding is awarded to institutions, and all funding proposals must support the institutions' strategic research plans.

Eligible Canadian institutions apply for support through a particular CFI fund, and all proposals are assessed on three main criteria: the quality of the research and need for infrastructure; the project's contribution to strengthening the capacity for innovation; and the potential benefits of the research to Canada.

To date, the CFI has committed more than

**\$6.7  
BILLION**

in support of

**9,303  
projects at**

**145  
research  
institutions in**

**70**

**MUNICIPALITIES  
across Canada**

## Demonstrating leadership: a notable year

### You spoke, we listened

*The CFI reaches out to stakeholders through one of its most comprehensive pan-Canadian consultations ever*

In keeping with our core value of being consultative, the CFI undertook one of its most comprehensive pan-Canadian consultations to seek input into the structure of our suite of funds and initiatives for the \$1.33 billion allocation to the CFI in the 2015 Federal Budget. A discussion paper published in September 2015 served as background for our consultations with institutions, researchers and stakeholders.

Participants told us they want our funding to remain relevant and responsive to the research community and be flexible enough to meet the needs of the full spectrum of institutions across the country. In particular, the CFI should:

- ▶ ease the burden of applications, reviews and administration, including streamlining and simplifying proposal requirements;
- ▶ maximize the ability of the John R. Evans Leaders Fund to build and enhance research capacity for institutions across the country; and,
- ▶ be ready to respond to emerging trends and changes and work more closely with other national granting councils.

Some of the changes resulting from the consultation include more streamlined application requirements and the elimination of the requirement for institutional research plans to be submitted as part of the merit-review process. Instead, institutions simply need to ensure their applications for CFI funding meet their respective research priorities.

### Governor General's Innovation Awards

*The CFI is recognized for its merit-review process and becomes a founding partner for new innovation awards*

In today's globally competitive and interconnected world, increasing innovation within an inclusive, compassionate society will be the key to Canada's success as a caring, efficient and prosperous nation. In 2015, His Excellency the Right Honourable David Johnston, Governor General of Canada, asked the Canada Foundation for Innovation to be one of the founding partners in a prestigious national awards program to celebrate Canada's most accomplished innovators. The awards celebrate excellence in innovation across all sectors of society and aim to inspire Canadians to be entrepreneurial innovators and to foster an active culture of innovation that has a meaningful impact on our lives.



THE PAN-CANADIAN CONSULTATION INCLUDED:

17 TOWN HALL  
MEETINGS



involving nearly **500** participants from **85** institutions

Meetings with  
representatives  
from

**9** PROVINCES

## Engaging the global research community

*The CFI hosts international roundtables and panels to expand the global discussion on Canadian research priorities*

### HALIFAX SYMPOSIUM ON ARCTIC AND MARINE RESEARCH INFRASTRUCTURE

There is a growing recognition that, given the scale and expense of conducting research in the oceans and Arctic, international collaboration is critical to solving the problems facing these important environments. In September 2015, the CFI, in conjunction with ERA-Can+, a project that promotes cooperation between the European Union and Canada in science, technology and innovation, and the European Commission, hosted a major trilateral symposium on Arctic and marine research infrastructure. Held in Halifax, this was the second international symposium on the subject and brought together over 80 participants from Europe, the United States and Canada to discuss the current state of Arctic and marine research and how best to meet the research infrastructure requirements of the future. The symposium featured

presentations by John Risley, CEO of Clearwater Fine Foods Inc., Canada's largest and most science-focused seafood company, and Jim Balsillie, founder of the Arctic Research Foundation and chair of the board of Sustainable Development Technology Canada.

 **14**  
MEETINGS AND  
TELECONFERENCES  
with institutions, associations  
and stakeholder organizations

**48** FORMAL WRITTEN  
SUBMISSIONS  
from CFI-eligible institutions,  
organizations and individuals

### AMERICAN ASSOCIATION FOR THE ADVANCEMENT OF SCIENCE ANNUAL MEETING: ROUNDTABLE AND PANEL ON INTERNATIONAL COLLABORATION ON ARCTIC RESEARCH

In February 2016, the CFI organized a panel session — “Arctic Research: building a model for responsible international collaboration” — at the annual meeting of the American Association for the Advancement of Science (AAAS) in Washington, D.C. The panel was moderated by the Honourable Kirsty Duncan, Minister of Science. The session, along with a roundtable discussion at the Canadian Embassy involving the Minister and Governor General David Johnston, continued two years of discussions between Canada, the European Union and the United States on how to collaborate on Arctic and marine research through the financing, management and use of research infrastructure. The session aimed to engage a broader range of stakeholders in generating the knowledge necessary to better understand the Arctic.

### CANADIAN SCIENCE POLICY CONFERENCE SESSION AND ROUNDTABLE ON BIG SCIENCE

Canada is now home to a number of Big Science research facilities — very large research infrastructures that cost upwards of \$100 million, take years to build and operate on decades-long time scales. While these facilities have a powerful impact on the quality and competitiveness of Canadian science, there is no established policy framework in Canada for considering, evaluating and overseeing large-scale research infrastructures. In November 2015, we organized a series of discussions on the question of how best to foresee, identify and support Canadian participation in very large-scale research facilities. These discussions included a panel session at the Canadian Science Policy Conference, a meeting with senior, deputy-minister-level representatives of the Government of Canada, and a roundtable with participants from the various federal research funding agencies. The discussions were informed by three international experts: Rolf Heuer, Director-General of CERN, Nigel Lockyer, Director of the Fermilab in the United States, and Catherine Ewart, Director of International Relations at the UK Science and Technology Facilities Council.

## Governance

### Board of Directors

The CFI Board of Directors is composed of a maximum of 13 individuals from a variety of backgrounds, each director offering a unique perspective and understanding of the research community and bringing expertise from one or more of the private, institutional, academic, research and government sectors. The Government of Canada appoints six directors, including the chair, while the remaining directors are appointed by CFI members. Directors are nominated and appointed for three-year terms.

#### BOARD OF DIRECTORS

- ■ ■ Kevin P. D. Smith, Chair
- ◆ Margaret Bloodworth, Vice-chair
  - Alain Beaudet (appointed February 2015)
  - Micheline Bouchard (appointed June 2015)
  - Sheila Brown (term expired June 2015)
  - Lynda Brown-Ganzert (appointed June 2015)
  - Carolyn Cross (resigned April 2015)
- William Driedzic
- ◆ ■ Albert Friesen
- Michel Kelly-Gagnon
  - Leslie MacLaren (appointed June 2015)
- Rod McInnes
- Ingrid Pickering
  - Louise Proulx (term expired June 2015)
  - Prem Singhmar (appointed June 2015)
- ◆ ■ Gordon F. Stovel
  - John Weissenberger (term expired April 2015)

### Members

The Board of Directors reports to a higher governing body made up of our members, who represent the Canadian public (they are similar to a company's shareholders). Members are nominated and appointed for a five-year term. They meet in June each year and are responsible for appointing seven of the Board directors, appointing external auditors, reviewing audited financial statements and approving the annual report before it is released at the annual public meeting.

#### MEMBERS

- Linda Humphreys, Co-chair
- Ronald Morrison, Co-chair starting July 2015
- John Anthony Boeckh (term expired June 2015)
- Harold Cook
- David Fung
- Jack Gauldie (appointed June 2015)
- Sandra Greer
- Roland Hosein, Co-chair to June 2015
- Marie-Andrée Mallette (term expired June 2015)
- Rick Miner
- ◆ Heather Munroe-Blum (resigned February 2016)
- Leigh Murphy
- Louise Proulx (appointed June 2015)
- Emöke Szathmáry
- Vianne Timmons

- AUDIT AND FINANCE COMMITTEE
- INVESTMENT COMMITTEE
- GOVERNANCE AND NOMINATING COMMITTEE
- MEMBERS GOVERNANCE AND NOMINATING COMMITTEE
- ◆ COMMITTEE CHAIR



## Ranges of remuneration

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### BOARD OF DIRECTORS AND MEMBERS

Directors opting to receive remuneration from the CFI are entitled to an annual retainer of \$5,000. Committee chairs receive \$7,500, and the board chair receives \$10,000. Directors are also entitled to receive a per diem fee of \$750 for attending board or committee meetings and a \$500 fee for attending a committee meeting associated with a board meeting. Members are not entitled to any remuneration. Members and directors may, however, be reimbursed for any reasonable out-of-pocket expenses incurred while performing their duties or attending CFI meetings. In 2015-16, the remuneration of board directors ranged from \$0 to \$15,250.

For the fiscal year ending March 31, 2016, compensation for CFI staff whose remuneration exceeded \$100,000 was within the following annual salary ranges:

#### CFI MANAGEMENT (OFFICERS)

##### **Gilles G. Patry**

President and CEO  
\$213,700 to \$299,200

##### **Manon Harvey**

Vice-President, Finance and Corporate Services  
\$141,600 to \$196,000

##### **Guy Levesque**

Vice-President, Programs and Planning  
\$141,600 to \$196,000

##### **Pierre Normand**

Vice-President, External Relations and Communications  
\$141,600 to \$196,000

#### EMPLOYEES

Director, Programs  
\$113,900 to \$151,900

Director, Communications  
Director, Corporate Services  
Director, Evaluation and Outcome Assessment  
Director, Finance  
\$99,200 to \$132,300

Manager, Finance  
Manager, John R. Evans Leaders Fund  
Senior Programs Officers  
Senior Advisor, Policy and Planning  
Senior Project Manager, Information Systems  
\$90,100 to \$120,000

Manager, Administration  
Manager, Human Resources  
Manager, Information Management/  
Information Technology  
Manager, Public Affairs  
Senior Analyst, Finance  
Senior Evaluation Officer  
Senior Financial Monitoring Officer  
\$81,100 to \$107,700

# FUND

Our funds are structured to respond to the evolving needs of Canadian research institutions and their researchers in all disciplines, working across the spectrum, from discovery to technology development. We also support operating and maintenance costs of research equipment and facilities.

## Innovation Fund

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The Innovation Fund — our flagship fund — reaches across all disciplines and areas of inquiry to provide support for transformative infrastructure projects that underpin cutting-edge, globally competitive research. It challenges institutions to make strategic choices and set priorities that build on their distinct advantages.

We issued a Call for Proposals for the next Innovation Fund competition in January 2016. The competition has a budget of \$425 million for infrastructure costs, and \$127 million for operating costs from the Infrastructure Operating Fund. This will be the tenth competition under this fund since its inauguration in October 1998. Funding decisions will be made in June 2017.

## Major Science Initiatives Fund

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The Major Science Initiatives Fund contributes to the ongoing operating and maintenance costs of national research facilities, enabling these facilities to operate at an optimal level, adopt best practices in governance and management, and strengthen their ability to support researchers undertaking world-class work.

The CFI currently funds a portion of operating and maintenance costs for 12 national research facilities chosen in two previous competitions — four funded in 2012 and eight funded in a special competition held in 2014.

We held a midterm review of the original four facilities that received funding in 2012: the Canadian Light Source, Ocean Networks Canada, the pan-Canadian advanced research computing platform (managed by Compute Canada) and SNOLAB. The CFI Board approved continuing support for the four facilities for the final two years of their MSI funding. The pan-Canadian computing platform received additional funding through the Cyberinfrastructure Initiative.

In addition, more than 70 participants gathered in Ottawa in October for the third Major Science Initiatives workshop. Under the theme “Sharing ideas and gaining insights,” the workshop offered all 12 national research facilities an opportunity to network and share their experiences of managing and sustaining their facilities.

In the same month, we launched a \$400 million competition to cover a portion of operating and maintenance costs for national research facilities over five years (2017-22). Institutions were invited to submit Notices of Intent which were reviewed by an assessment committee in January 2016. The committee recommended that the 21 facilities that met our eligibility criteria be invited to submit full proposals by the April 2016 deadline.

## John R. Evans Leaders Fund

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Named for the CFI’s founding board chair, this fund helps institutions attract and retain top researchers by providing funding for research infrastructure that is essential to building research capacity.

The John R. Evans Leaders Fund committed approximately \$60.7 million to 364 projects at 40 institutions across Canada in 2015-16.

The fund offers institutions the opportunity to acquire cutting-edge infrastructure to support the work of their leading research faculty, and to create competitive research support packages to attract new researchers. Infrastructure is used in projects spanning many research disciplines and focusing on areas such as inflammatory lung disease in horses, Anglo Saxon literature and the origins of cellular life on Earth. (Read these stories on page 14.)

## Cyberinfrastructure Initiative

Many of today's research endeavours are driven by massive digitization initiatives, high-throughput devices, sensor platforms and computational modelling and simulation, all of which generate data that are unprecedented in size and complexity. Cyberinfrastructure is the advanced research computing infrastructure, along with human and capital resources, that are required to support and catalyze these research endeavours. Cyberinfrastructure underpins leading-edge research in all fields of inquiry, from the social sciences and humanities to health and physical sciences through to engineering. (Read about a few Canadian research projects that unlock the power of big data on page 18.)

The CFI's Cyberinfrastructure Initiative provides infrastructure for computationally and data-intensive research to institutions across the country. In 2015-16, the CFI invested more than \$40 million under its Cyberinfrastructure Initiative through two separate competitions.

### CHALLENGE 1

This competition supports research data infrastructure projects that enable communities of researchers, data scientists, data analysts, software developers and other experts to devise ways of organizing and using research data resources. The power of this kind of computer infrastructure allows researchers everywhere to gain access and pool the immense amount of data from their individual projects, greatly broadening the span and speed of knowledge.

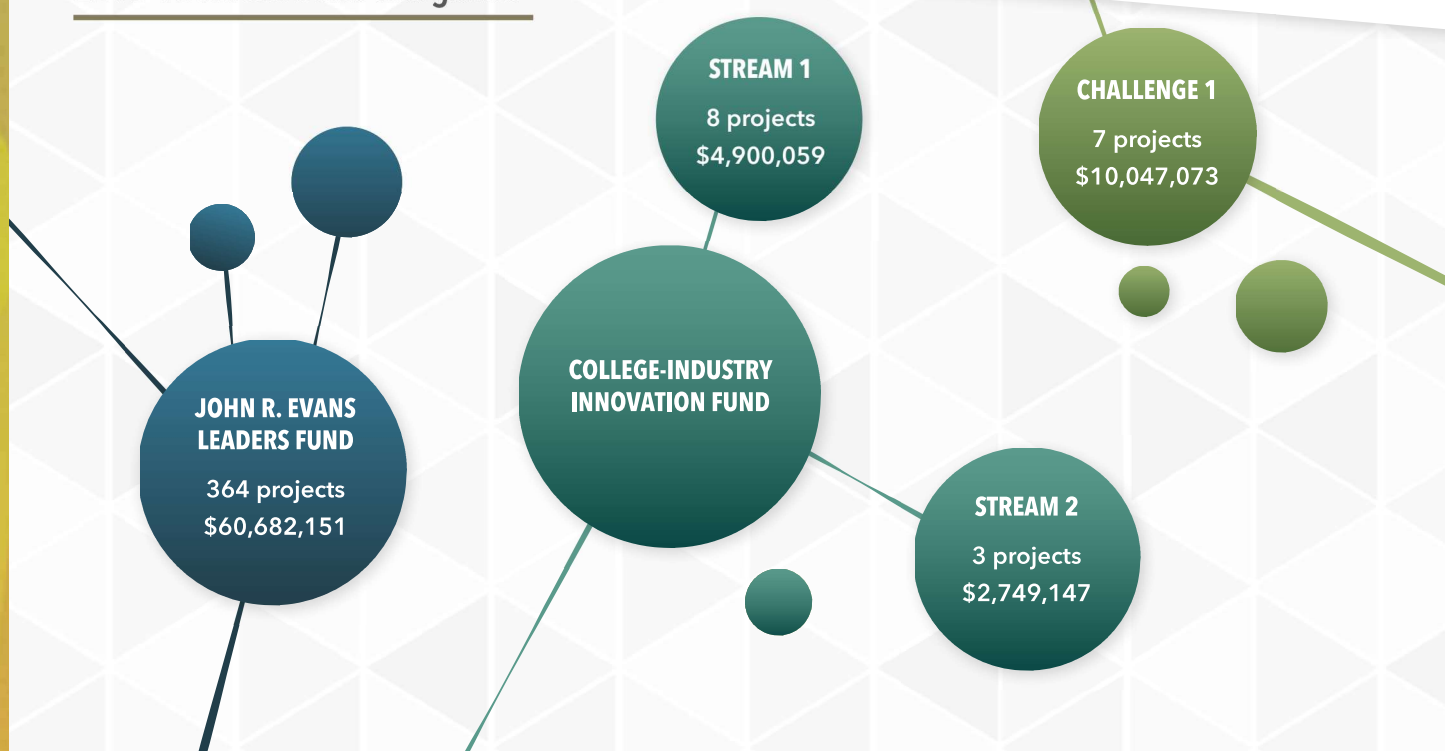
The CFI committed \$10 million to seven proposals under this challenge. Among the projects supported were: CBRAIN, a web-based software that connects researchers to large neuroimaging datasets from around the world and the MERIDIAN Consortium, a database that will consolidate acoustic data gathered from the oceans.

### CHALLENGE 2

Through this competition the CFI invests in upgrades and modernization of the pan-Canadian advanced research computing platform managed by Compute Canada. This year, the CFI invested \$30 million under Challenge 2.

In January 2016, we launched a second stage of Challenge 2, which will provide up to \$20 million for continued upgrades and modernization of the pan-Canadian platform. Decisions will be made in 2016-17.

### 2015-16 investments at a glance



## College-Industry Innovation Fund

Providing institutions with state-of-the-art research infrastructure helps ensure colleges have the capacity to conduct the applied research and technology development central to their partnerships with the private sector.

The College-Industry Innovation Fund Stream 1 supports infrastructure for enhancing applied research and technology development in colleges. In each competition, colleges may submit one proposal requesting up to \$1 million from the CFI. In 2015-16, the CFI funded eight projects under this stream for a total contribution of \$4.9 million. The projects funded range from building research greenhouses to food manufacturing equipment to tools to help Quebec's metallurgy sector develop new products. (Read these stories on page 22.)

An additional \$2.7 million was invested in three projects at three institutions under Stream 2 of the College-Industry Innovation Fund. This stream supports research infrastructure associated with a five-year Innovation Enhancement Grant from the Natural Sciences and Engineering Research Council of Canada's (NSERC) College and Community Innovation Program. The recipient institutions, Collège d'Alma in Alma, Que., Cégep Édouard-Montpetit in Longueuil, Que., and Cégep de la Gaspésie et des Îles in Gaspé, Que., will use their infrastructure to advance their work in improving the preservation of potatoes, enhancing aeronautic operations testing, and integrating renewable energy and storage technologies in remote areas, respectively.

From the new allocation announced in the 2015 Federal Budget, the CFI will invest up to \$40 million between 2016 and 2019 for both streams of the College-Industry Innovation Fund. We launched a Call for Proposals for the 2016 Stream 1 competition in December 2015,

with proposals due in May 2016. And in early 2016, we confirmed our continued participation in the NSERC program through Stream 2, with proposals due in October 2016.

## Exceptional Opportunities Fund

While most infrastructure projects require significant time to develop from conceptualization to implementation, there are rare instances where an exceptional research opportunity could be missed if it had to follow regular national competition schedules. The CFI created the Exceptional Opportunities Fund to assist institutions and their partners in seizing such unique opportunities.

In 2015, one proposal was submitted under the Exceptional Opportunities Fund. The University of Alberta received \$1.8 million to establish the Canadian Ice Core Archive on its campus. The archive is a unique repository of samples of ice from glaciers and ice caps, some dating back as far as the last ice age. The new funding assures the availability of a critically important Canadian research resource for future studies on northern climates and climate change.

## Infrastructure Operating Fund

This fund offers support equivalent to 30 percent of CFI capital awards to assist institutions in the operation and maintenance of CFI-funded infrastructure. In 2015-16, \$24 million was awarded to institutions across Canada to help operate and maintain the state-of-the-art infrastructure we fund.



## World-class research funded through the John R. Evans Leaders Fund

*From horse asthma to rotator cuff injuries to the origins of life on Earth, many of the world's top researchers are probing the leading edge at institutions across Canada*

The John R. Evans Leaders Fund is, in a sense, a celebration of remarkable people. Its fundamental goal is to help Canadian universities support the world's top researchers by giving them the tools they need to push the boundaries of their work. Their research covers a full range of expertise, from health to agriculture and the environment, to the humanities and social sciences, to the fundamentals of nature.

Each of their stories is a testament to Canada's ability to attract and retain the globe's brightest minds. The researchers funded under the John R. Evans Leaders Fund are curious, creative and above all, collaborative. They are an asset to Canadian research, to our economy and to our well-being. Here are three of their stories.

### Horse play

When University of Saskatchewan veterinary medicine researcher, Julia Montgomery, drives to farms to take airway samples from horses affected by inflammatory lung diseases, she has to get back to the lab within a couple hours, otherwise the live cells deteriorate. Support from the CFI will enable Montgomery to set up a Mobile Equine Field Laboratory — a customized horse trailer with a fridge, freezer, generator, incubator, microscope and a Cytospin for transferring samples from tubes onto slides. “This will really increase the number of farms we can visit,” says Montgomery, who hopes to develop more effective diagnosis and treatment for airway inflammation in horses. “Right now, distance and time-sensitive procedures are our biggest limiting factors.” Acute and chronic lung ailments frequently impact the performance of horses, whether they're working farm animals or compete in dressage, jumping and racing events. Both of these industries create jobs and contribute to the economy, says Montgomery, who is from Germany but came to Canada for a veterinary residency 10 years ago and is staying for the opportunity to build a research program. In addition to the direct applications of her work, there are similarities between airway diseases in horses and human asthma, and advances resulting from the mobile lab could lead to a better understanding of this complex, debilitating condition that affects roughly three million Canadians.

### Poems from the past

The inscriptions carved into the Ruthwell Cross, an eighth-century, 17-foot-tall stone monument on display in a Scottish church, may be the oldest surviving Anglo-Saxon poem on the planet, and with the help of the Visionary Cross Digital Library, researchers from around the world will be able to analyze and interpret its significance without leaving their desks. Daniel O'Donnell, an English professor and digital humanities expert at the University of Lethbridge, together with his colleagues James Graham and Wendy Osborn, will use CFI support to purchase computers with large, high-resolution screens, fast graphics cards and extra RAM that are powerful enough to process 3-D laser scans of the cross and other important texts and objects in Anglo-Saxon England. “This funding allows a small university on the prairies to have a large footprint,” says O'Donnell, who moved to Lethbridge nearly 20 years ago after attending graduate school in the U.S. and working in the UK. “This is a new way of understanding cultural heritage material,” he adds, explaining that the open-access, fully searchable and annotated digital archive will be a resource for both scholars and a popular audience. “The more you put it out there and let people play with it, the better we will be able to explore and understand.” The digital library project is also training students for, and generating interest in, cultural tourism, a growing industry in Canada and beyond.



## The ingredients of life

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The Origins of Life Laboratory at McMaster University's Origins Institute has an ambitious goal — a quest to understand how cellular life emerged on Earth around 3.5 billion years ago. But to biophysicist Maikel Rheinstädter, the project is fairly simple. You need three things to create a cell, he says: a membrane, enzymes to facilitate certain reactions, and molecules such as DNA and RNA to store information. Put these things together inside a simulation chamber that replicates the volcanic conditions on early Earth, adjust and cycle the temperature, humidity level, radiation and other factors, and you may be able to solve a mystery that has puzzled scientists for more than a century. Rheinstädter has teamed up with astrophysicist Ralph Pudritz and biochemist Yingfu Li, and the trio from McMaster will use CFI support to custom build two

unique-to-Canada chambers that will be able to mimic daily and seasonal cycles and simulate hundreds of years in a couple of days. The results of their experiments could answer fundamental questions about the evolution of life on Earth and the ability of other planets to support life, and lead to a better understanding of functional RNA, which has many medical and biotech applications. “Interdisciplinarity is the key to this project,” says Rheinstädter, who was drawn to Canada in 2009 by a CFI grant after stints in Germany, France and the U.S. “By learning how cellular life first formed, we will create so much knowledge about how things work at a molecular level.”

# EVALUATE

We are committed to informed decision making and public accountability. We actively monitor our performance, assess our contribution to Canada's research capacity, and analyze the outcomes and impacts of our investments in research infrastructure.



## Evidence-based information on CFI outcomes

Institutions are required to submit project progress reports for each of their CFI-funded projects for a period of four or five years following the finalization of their awards. We compile this information annually into our *Report on results*, which provides evidence on the outputs and outcomes of CFI-funded infrastructure as they relate to the CFI's overall objectives. In 2015-16, we compiled data from 1,800 CFI-funded project reports. Here are some of the results.

### CFI IMPACTS BY THE NUMBERS

*Highlights of where we made a difference in 2015-16\**

#### RESEARCHER ATTRACTION

Among the

**451 PROJECT LEADERS** who submitted a report for the first time, 49% reported they were newly recruited to the institution. **98%** of them said the availability of CFI-funded infrastructure was an important factor in their decision to join the institution.

#### TRAINEES USING INFRASTRUCTURE

**26,508 POST-DOCTORAL FELLOWS** and **HIGHER EDUCATION STUDENTS** had the opportunity to expand their research skills using CFI-funded infrastructure. Of those, **56%** used the infrastructure for the first time.

#### INFRASTRUCTURE USE

**9,792 RESEARCHERS** from outside Canada used CFI-funded infrastructure.

#### RESEARCH AGREEMENTS

CFI-funded infrastructure facilitated new formal collaborative research agreements in **34%** of projects for a total of **2,380 AGREEMENTS.**

\*Results from the 2015 project progress reports

### NIAGARA COLLEGE'S FOOD AND WINE INSTITUTE HELPS CRAFT AN AWARD-WINNING, NON-ALCOHOLIC BEER

When MADD Virgin Drinks wanted to add a tasty craft beer to their lineup of non-alcoholic drinks, the company turned to the Canadian Food & Wine Institute at Niagara College. The line of alcohol-free drinks is produced under license to Mothers Against Drunk Driving. It was created to provide an alternative to alcohol for designated drivers, pregnant women, or anyone who wants to enjoy the flavour of beer but avoid its effects.

## Creating jobs for Canadians

One of the objectives of the CFI is to support economic growth and job creation through innovation so we routinely examine the progress reports from our funded projects to get a better understanding of how we are meeting that objective. We see that 1,518 new research and research support jobs were created in 2014-15 alone, which is in line with the four-year average.

Because the CFI funds state-of-the-art infrastructure, the projects it funds are often complex in nature. As a result, a secondary effect of investing in research infrastructure is creating jobs relating to the construction or renovation of space to house CFI-funded infrastructure. Using data from the financial reports institutions submit for each of their CFI-funded projects, along with information from the Industry Accounts Division of Statistics Canada, our analysis showed that CFI investments in construction or renovation to house CFI-funded infrastructure created or supported an estimated 19,940 construction job years between 1999 and 2015. When we couple construction spending with the impact it has in related areas, such as changes due to inter-industry purchases and in the production of goods and services, this number increases to 42,310 over the same time period.

### Colleges support local business innovation

Institutions receiving funding through the College-Industry Innovation Fund are required to report on performance at intervals of 18, 36 and 60 months after their infrastructure is in place and operational. We interviewed institutions at the 18-month point in 2015-16 to document progress and challenges, and to take stock of successes and inform future program design. Preliminary findings suggest that several colleges have demonstrated an ability to take advantage of their applied research capacity to support industry in their region, and CFI-funded infrastructure has contributed to some successes in research and business. [Read about two examples in the grey box below.](#)

#### A QUEBEC CITY-BASED COMPANY IS OPENING ITS FIRST LITHIUM PROCESSING PLANT IN SHAWINIGAN

Nemaska Lithium is partnering with Collège Shawinigan to develop a competitive new process for extracting valuable compounds from ore. The plant represents an investment of \$300 million for the small community, which has suffered from recent factory closures, and the company believes there's room to grow. Nemaska will begin producing high-quality lithium hydroxide and lithium carbonate mainly for hybrid and electric car batteries when its plant opens in late 2018. It says the demand for lithium batteries continues to expand due to the increasing need for electric vehicles and large-scale lithium battery storage.

## Three researchers unlock the power of big data

*High performance computing opens up an incredible breadth and diversity of possibility for researchers across Canada*

The incredible power of high performance computing to unlock massive data sets in order to answer an impressive range of research questions is a hallmark of modern computing. Research today is increasingly driven by massive digitization initiatives, high-throughput devices, sensor platforms and computational modelling and simulation, all of which generate data that are unprecedented in size and complexity. Here are three Canadian researchers whose work relies on advanced computing capabilities.

### DNA detective: Guillaume Bourque, McGill University

Select any combination of people from anywhere in the world and you'll find that 99.5 percent of their genomes are the same. The remaining 0.5 percent accounts for our differences, including our susceptibility to illnesses ranging from cancer to Alzheimer's disease.

But because the human genome is made up of more than three billion nucleotides, even 0.5 percent is a huge number to sort through, and it doesn't help that variations in their sequence could show up just about anywhere in the genome.

It's no surprise then that when researchers look for common variations in a group of people suffering from the same illness, they do so with the help of high-powered computing.

In Canada, many will send genetic blood or tumour samples to the lab of McGill University genomicist Guillaume Bourque.

After DNA sequencing, Bourque and his team take the hundreds of millions of DNA fragments from each person's sample and reassemble them into a single genome for that individual. They then compare each person's genome to a reference genome representing a compilation of healthy people.

"We might get samples from 1,000 patients with the same disease," says Bourque. "We look to see if they have anything in common that is different from most people and that requires a lot of computing."

### Particle spotter: Reda Tafirout, TRIUMF

The Holy Grail of particle physics, the Higgs boson, was discovered in 2012. But there is still much to be learned by smashing protons together at high energies in the world's most powerful particle accelerator, the Large Hadron Collider in Meyrin, Switzerland.

Finding the Higgs boson gave physicists more certainty that the Standard Model is correct. The model is a mathematical framework used to describe the fundamental nature of matter and the forces that shape our universe. Because the Higgs boson was the last particle in the model to be found, its discovery made headlines around the world.

The next phase involves fine tuning scientists' understanding of the particle and searching for new phenomena, such as dark matter. TRIUMF particle physicist Reda Tafirout says that this means doubling the energy in the collider and producing more Higgs boson samples to refine their measurements.

"The Standard Model makes very precise predictions, so if we have any measurement that is not fully compatible with it — a new interaction or a new force that hasn't been discovered — we want to know," he says.

But with a staggering number of protons smashing together at the same time, it's hard to single out which collisions might be relevant, which is why scientists rely on high-performance computers.

"It selects the collisions that lead to interactions that give some insight," says Tafirout.

## Literary history hound: Susan Brown, University of Guelph

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The Orlando Project began as a major history of women's writing in the British Isles and has grown up to become a leading example of how to integrate text and technology.

It is not a book, nor is it a digital edition of an existing text, explains one of its directors, University of Guelph digital literary historian Susan Brown. Rather, it is a trove of information on 1,300 writers — amounting to eight million words — that combines information about their writing careers with chronological and bibliographical information.

“What makes Orlando different from similar scholarly works is the extent to which the material is structured by the encoding of the text to reflect various aspects of literary history,” says Brown. That includes features of literary works such as genre or how they were received, through to writers' relationships with their publishers, to their intellectual influences, friends, political activities and health concerns.

With the help of advanced research computing, the Orlando Project's specialized encoding allows materials to be found, sifted and reordered according to researchers' interests and priorities. It also enables massive visualizations of writers' networks and relationships that allow researchers to perceive new patterns in cultural history.

“Orlando has been heralded as a model for other such works of digital scholarship to follow, in its use of semantic encoding to create a digital resource that leverages the power of computers in new ways,” says Brown. Orlando's pioneering model for digital scholarship also underpins the Canadian Writing Research Collaboratory, a new online platform that launched in spring 2016 that will make advanced research computing accessible to literary scholars across the country.

# COMMUNICATE

We are committed to demonstrating the impacts and benefits of our funding, and contributing to strengthening the place of science and research in Canadian culture. Through various activities, such as events, publications, multimedia, government relations, social media and media relations, we tell the compelling stories of the research and outcomes the CFI enables, allowing us to remain transparent and accountable to the Canadian public.

## Better online

Throughout 2015-16, we continued to expand the size and scope of the CFI Research Facilities Navigator, a searchable directory of research labs and facilities across Canada that are open to working with business. The Navigator now contains details on more than 450 laboratories and research facilities. It was created to help businesses and other organizations connect with universities, colleges and research hospitals as a first step towards establishing research partnerships and collaborations.

## Trusted voice

In support of the CFI's goal to be a trusted voice in research and innovation in Canada, we published several opinion pieces in prominent print and online publications. In response to the Federal Government's budget of April 21, 2015, CFI Board Chair Kevin Smith explained why Canadians should care about research infrastructure and understand how it impacts our country in "It's worth paying attention to research infrastructure," published May 5, 2015, in *The Globe and Mail*. CFI President and CEO, Gilles Patry, reflected on the importance of scientific collaborations to further innovation in "Research is a contact sport" in the November 9 edition of *The Hill Times*.

## Events

The CFI organized four national funding announcements. Two John R. Evans Leaders Fund announcements were held — one at the Université de Moncton in July 2015 and another at the University of Alberta in March 2016. The 2015 Innovation Fund announcement at the Children's Hospital of Eastern Ontario Research Institute, and the Cyberinfrastructure Initiative announcement at the University of Waterloo, both took place in July 2015.

In December 2015, Professor Bartha Maria Knoppers, Director of the Centre of Genomics and Policy, and Canada Research Chair in Law and Medicine at McGill University, spoke at our annual public meeting in Ottawa. Her talk was called "Defining the human right to benefit from scientific progress: Big data and the responsible sharing of genomic and health-related data."

## The CFI explained

This year, we produced a series of videos that offered a different way of explaining how the CFI operates. One video answers the question, "What is research infrastructure?" while another sheds light on how a typical CFI funding cycle works. The third in the series breaks down how our renowned merit-review process works.

## By the numbers

959  
podcast plays

28  
events

43  
new videos  
produced

40  
new profiles listed  
on the Navigator

2,555  
new Twitter followers

6  
commentaries  
published

49,762  
YouTube video  
minutes viewed



## Colleges with edge

*The College-Industry Innovation Fund places colleges across the country on the front lines of keeping Canadian business competitive*

### Keeping local food growers viable

Most Canadians depend on large farms that transport produce tremendous distances. A movement toward locally grown fruits and vegetables is underway, but small farms in urban and peri-urban areas typically lack the capacity to supply viable regional food systems. To support this shift, Kwantlen Polytechnic University in Richmond, B.C., is building a plant science and seed testing lab, greenhouse and 20-acre research farm, with \$670,000 from the CFI's College-Industry Innovation Fund. The project's goal, says sustainable agriculture professor Rebecca Harbut, is to help small farmers identify suitable crops and develop sustainable production systems — research that has generally benefited large-scale farms in the past. "It's a rapidly changing landscape," says Harbut, whose partners include a seed company and organic growers, "but we're missing opportunities because there is lack of research-based information for farmers on small parcels of land." The lab, with seed sorting and analysis equipment, will boost the province's nascent organic seed industry. The greenhouse, growth chambers and chromatography equipment will support experiments on low-input, high-value crops, including the Asian greens in demand by the region's diverse population. And innovative technologies, such as weeding robots and soil moisture sensors developed in tandem with Kwantlen's physics department, can be tested on the farm. Ultimately, higher yields and lower labour costs could help farmers grow more healthy food close to market, in B.C. and beyond.

### Creating new opportunities for metals and manufacturing

Canadian manufacturers rely on innovative technologies and value-added products to compete against companies from countries with cheaper labour and raw materials. Since 1985, Cégep de Trois-Rivières' Québec Metallurgy Centre (QMC) has been solving problems for the province's metallurgical sector. "We help large and small companies improve or develop new products, find niche markets and keep manufacturing jobs here," says Nicolas Giguère, director of advanced alloys at the QMC. To consolidate its capacity to do precise chemical analysis, mechanical testing and corrosion testing for industrial clients, the QMC is using CFI support to acquire five new pieces of equipment, including a pair of scanning electron microscope detectors to better see the microstructure, grain orientation and particle-phase chemistry of alloys, and a tensile testing machine to gauge the strength of metals. QMC research could help accelerate breakthroughs such as 3D-printed parts for airplane landing gear and corrosion-resistant titanium valves for refineries, and facilitate biomedical advances like improved stents and hip joints. "We leave fundamental research to universities," says Giguère. "We do applied research to better understand the behaviour of metals." In addition to helping more than 150 clients develop high-quality products every year, the QMC also helps create "high-quality people" — Cégep students who do lab work and get summer jobs at the centre.



## Helping small businesses get new food and beverage products to market faster

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George Brown College's Food Innovation and Research Studio (FIRSt) looks like an extremely well-equipped commercial kitchen, but it's not the domain of an overbearing chef. The food scientists and culinary technicians who work here specialize in collaborations with partners from the Greater Toronto Area's dynamic food and beverage manufacturing sector — small and medium-sized companies that need research expertise and equipment to develop or refine products. With support from the CFI, FIRSt will purchase more than five dozen pieces of equipment to help its partners deal with issues such as sensory evaluation, labelling requirements, and shipping and storage considerations. "We help SMEs accelerate the time it takes to reach the market," says Dawn Davidson, the college's director of research and

innovation. "It's not really efficient for them to do it on their own." Entrepreneurs often have great ideas but need help scaling up for widespread distribution; you can't simply cook a bigger batch. Davidson cites companies that make *arepas* (a Latin American flatbread) and herb- and fruit-infused water that have benefited from collaborations with FIRSt, which can range from a few days of nutritional analysis to months of product development. Companies might have equipment for production, but not for testing, and it doesn't make economic sense to purchase the latter. Although after working with FIRSt, many gain a deeper understanding of the research process and may be more inclined to invest in R&D as they grow.

# MANAGE

Our involvement does not end when institutions receive their funding. It is also our responsibility to oversee how that money is spent. To do that, we tailor the nature and extent of our oversight activities to the risks each institution and project faces. Canadian research institutions receiving CFI funding have good policies, practices, processes and controls for managing grant money, and our oversight activities confirm that strong institutional practices are in place.



## Investment plan

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We invest the funds entrusted by the Government of Canada in accordance with our investment strategy and investment policy, the principal objective of which is to preserve capital to meet future cash requirements. The CFI's investment strategy and investment policy were both reviewed in the fall of 2015 by the CFI Investment Committee, which oversees the management and investment of CFI funds.

The CFI's declining investment balance and related investment income reflect disbursements to institutions and the multi-year funding model used to transfer funds to the CFI. Previously, the Government of Canada provided federal funding in single lump-sum payments; since 2006, our funding comes in annual installments based on the estimated cash requirements for the year.

## Monitoring visits

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The CFI visits recipient institutions to discuss their policies, practices, processes and controls for grant management, and review evidence to assess how well they are managing CFI-funded projects. We use a risk-based approach to select institutions for monitoring visits each year. We also began performing monitoring visits at smaller institutions this year, after having received requests from them to be involved. In total, we conducted nine visits, during which we reviewed the institutions' policies, practices, processes and controls over the life cycle of CFI-funded awards. We also share good practices different institutions use for managing CFI funds, and highlight opportunities for increasing efficiency and reducing administrative burden. The feedback we obtain from institutions during these visits helps us ensure our policies, guidelines and expectations are clear and adequate.

## Contribution audits and other cost reviews

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Contribution audits and other cost reviews ensure the funding received by an institution for a given project has been used in accordance with the terms and conditions of the award and our policies and guidelines. We performed 16 contribution audits or other cost reviews in 2015-16. A risk-based approach is used to select which projects will be audited. All projects with a CFI contribution exceeding \$10 million are automatically subject to an audit. The risks associated to a project determine the scope, nature and extent of the audit activities.

## Financial reports

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Financial reports are submitted by institutions for each CFI-funded project at specific intervals, determined by the complexity and risk of each project. This year we received 940 financial reports from recipient institutions. These reports provide information on individual project costs, funding and timelines for the acquisition of the infrastructure. The frequency of financial report submissions ranges from quarterly reporting to reporting every two years. We reviewed each of these financial reports to identify and address any issues.

## Financial highlights

For the year ending March 31, 2016, our disbursements to eligible recipients totalled \$326.9 million, only slightly less than the previous year's total of \$389.3 million. Operating expenses were \$13.8 million, down from \$14.8 million the previous year, which reflects a lower volume of competitions and associated proposal review activities. We kept our operating costs low, at 4.2 percent of disbursements to recipient institutions in 2015-16. Since its creation in 1997, the CFI has maintained, on average, operating costs of 3.2 percent of disbursements to recipient institutions.

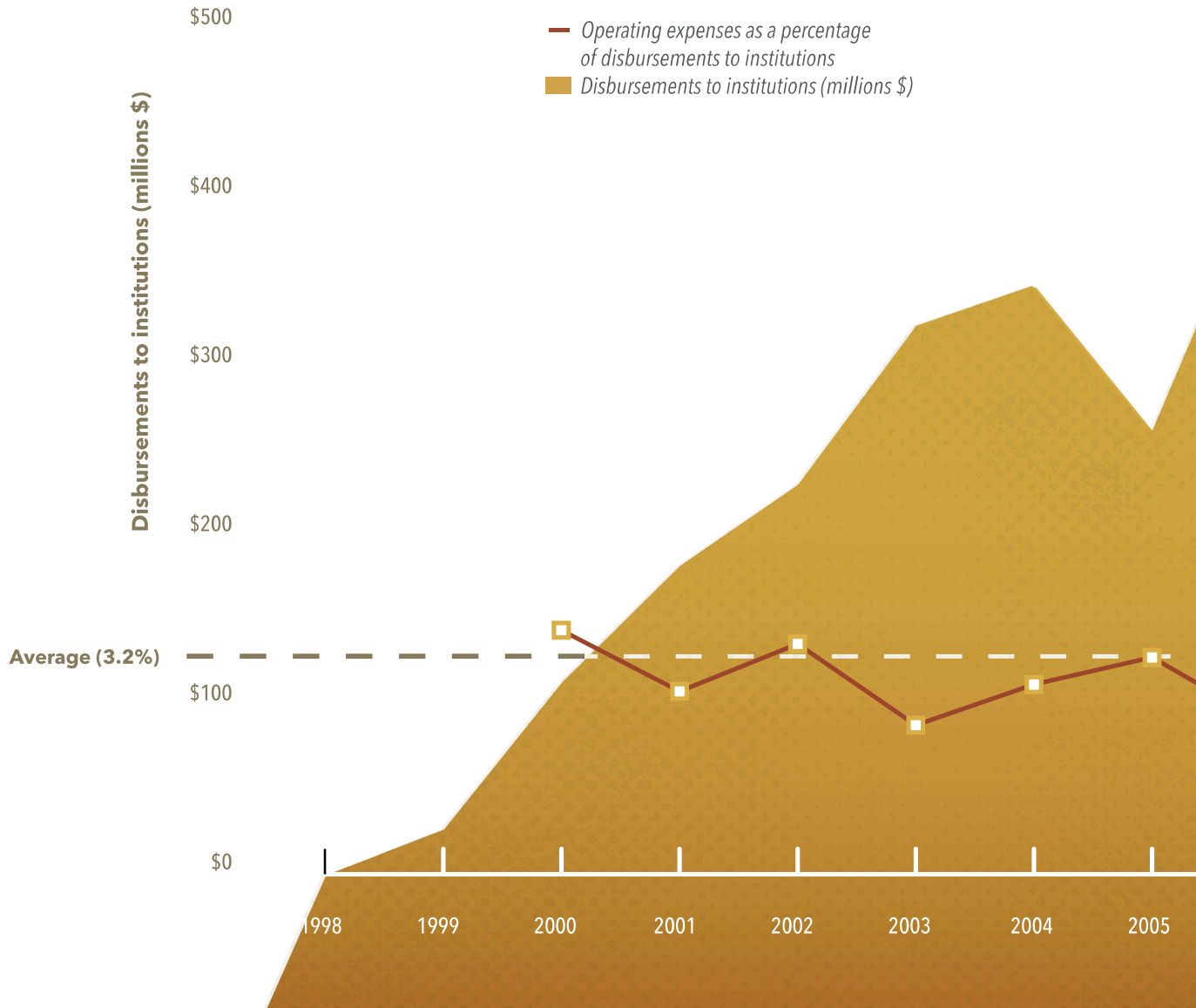
In 2015-16, the CFI approved grants for a maximum amount of \$134.3 million. Disbursements related to these grants will take place over the years as projects are implemented.

Since it began, the CFI has approved grants for a maximum amount of \$6.7 billion, including \$1.68 billion of invested revenue earned so far. CFI contributions, along with those from institutions and their partners, have resulted in an investment of approximately \$15.9 billion in research infrastructure.

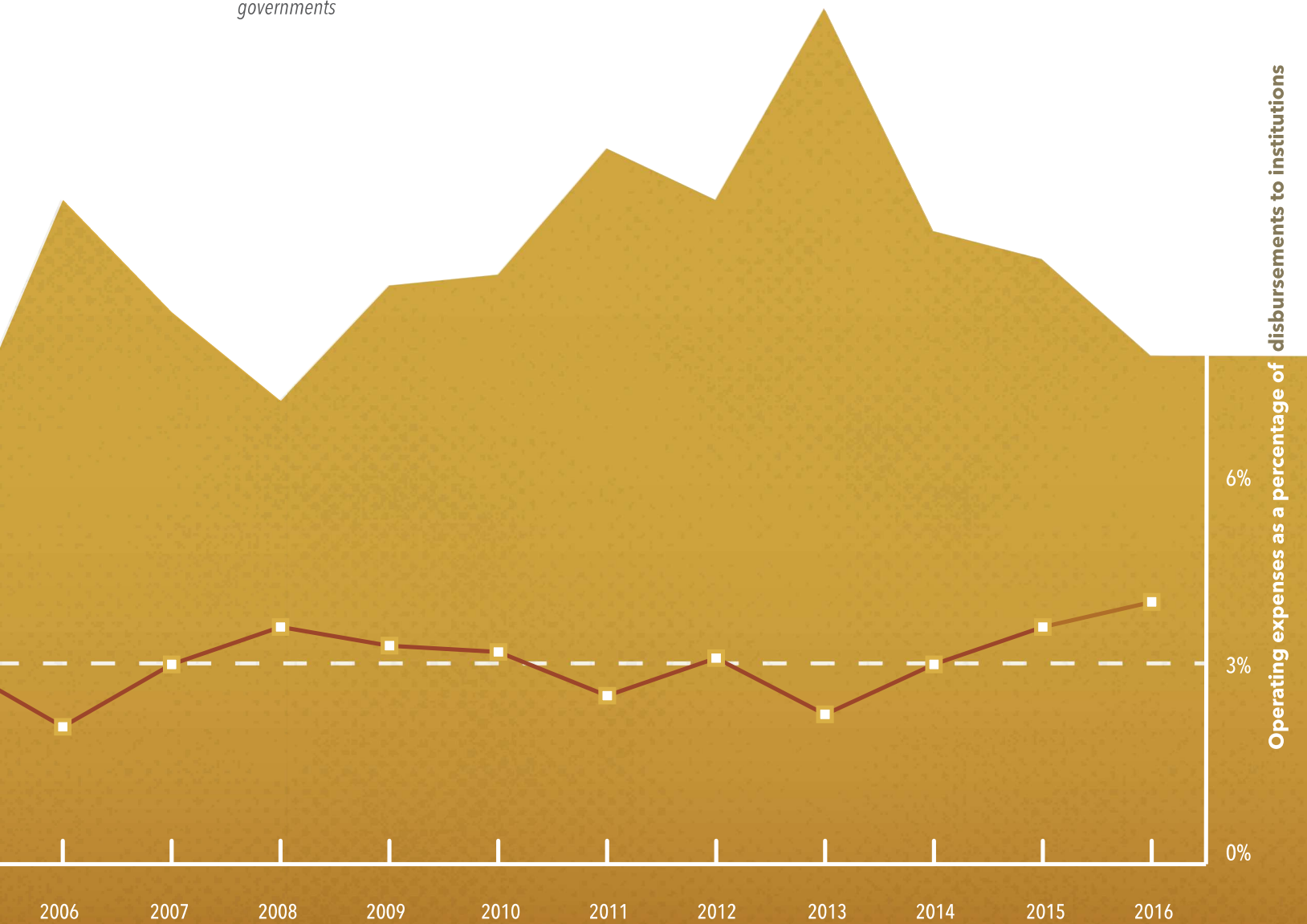
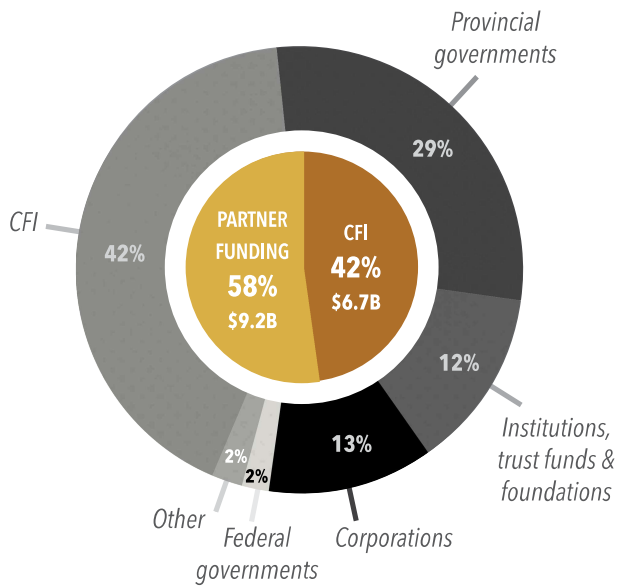
In 2015-16, the CFI received \$177.1 million in grants from the Government of Canada. At March 31, 2016, the Government of Canada had committed \$6.82 billion in grants to the CFI, of which \$4.94 billion has been received. The balance will be received in future years, based on annual cash requirements.

At March 31, 2016, a total of \$546.7 million remained as deferred contributions related to expenses of future years. This amount is for making disbursements in subsequent years for CFI operations and for approved projects.

### ANNUAL DISBURSEMENTS TO INSTITUTIONS AND OPERATING EXPENSES AS A PERCENTAGE OF DISBURSEMENTS (AS OF MARCH 31, 2016)



CFI CONTRIBUTIONS AND OTHER FUNDING SOURCES:  
TOTAL \$15.9 BILLION (AS OF MARCH 31, 2016)







# FINANCIAL STATEMENTS

To the Members of the  
**Canada Foundation for Innovation**

We have audited the accompanying financial statements of the Canada Foundation for Innovation, which comprise the statement of financial position as at March 31, 2016 and the statements of operations and of cash flows for the year then ended and a summary of significant accounting policies and other explanatory information.

**Management's responsibility for the financial statements**

Management is responsible for the preparation and fair presentation of these financial statements in accordance with Canadian public sector accounting standards for government not-for-profit organizations, and for such internal control as management determines is necessary to enable the preparation of financial statements that are free from material misstatement, whether due to fraud or error.

**Auditors' responsibility**

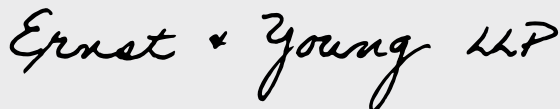
Our responsibility is to express an opinion on these financial statements based on our audit. We conducted our audit in accordance with Canadian generally accepted auditing standards. Those standards require that we comply with ethical requirements and plan and perform the audit to obtain reasonable assurance about whether the financial statements are free from material misstatement.

An audit involves performing procedures to obtain audit evidence about the amounts and disclosures in the financial statements. The procedures selected depend on the auditors' judgment, including the assessment of the risks of material misstatement of the financial statements, whether due to fraud or error. In making those risk assessments, the auditors consider internal control relevant to the entity's preparation and fair presentation of the financial statements in order to design audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion on the effectiveness of the entity's internal control. An audit also includes evaluating the appropriateness of accounting policies used and the reasonableness of accounting estimates made by management, as well as evaluating the overall presentation of the financial statements.

We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our audit opinion.

**Opinion**

In our opinion, the financial statements present fairly, in all material respects, the financial position of the Canada Foundation for Innovation as at March 31, 2016 and the results of its operations and its cash flows for the year then ended in accordance with Canadian public sector accounting standards for government not-for-profit organizations.

The signature of Ernst & Young LLP is written in a cursive, handwritten style in black ink.

**Canada Chartered Professional Accountants  
Licensed Public Accountants**

Ottawa, Canada  
June 21, 2016

# Statement of financial position

As at March 31

	2016 \$	2015 \$
<b>ASSETS</b>		
<b>Current</b>		
Cash	15,097,913	15,146,132
Interest and other receivables	2,636,292	4,842,113
Investments [note 4]	529,889,626	680,044,912
Prepaid expenses	107,218	216,148
<b>Total current assets</b>	<b>547,731,049</b>	<b>700,249,305</b>
Capital assets [note 5]	3,879,915	4,583,139
<b>TOTAL ASSETS</b>	<b>551,610,964</b>	<b>704,832,444</b>
<b>LIABILITIES AND NET ASSETS</b>		
<b>Current</b>		
Accounts payable and accrued liabilities	1,005,261	873,756
<b>Total current liabilities</b>	<b>1,005,261</b>	<b>873,756</b>
Deferred contributions [note 6]		
Expenses of future years	546,725,788	699,375,549
Capital assets	3,879,915	4,583,139
<b>Total liabilities</b>	<b>551,610,964</b>	<b>704,832,444</b>
Commitments [note 7]		
<b>Net assets [note 8]</b>	<b>–</b>	<b>–</b>
<b>TOTAL LIABILITIES AND NET ASSETS</b>	<b>551,610,964</b>	<b>704,832,444</b>

See accompanying notes

On behalf of the Board:



Director



Director

## Statement of operations

Year ended March 31

	2016 \$	2015 \$
<b>REVENUE</b> [note 6]		
Recognition of deferred contributions related to amounts granted to eligible recipients	326,928,458	389,312,812
Recognition of deferred contributions related to current year operations	12,842,016	13,972,079
Amortization of deferred contributions related to capital assets	972,681	790,570
	<b>340,743,155</b>	404,075,461
<b>EXPENSES</b>		
Grants to eligible recipients	326,928,458	389,312,812
General and administration	12,842,016	13,972,079
Amortization of capital assets	972,681	790,570
	<b>340,743,155</b>	404,075,461
<b>EXCESS OF REVENUE OVER EXPENSES</b>	<b>—</b>	<b>—</b>

See accompanying notes

## Statement of cash flows

Year ended March 31

	2016 \$	2015 \$
<b>OPERATING ACTIVITIES</b>		
Excess of revenue over expenses	—	—
Add (deduct) items not involving cash		
Amortization of capital assets	972,681	790,570
Amortization of deferred contributions related to capital assets	(972,681)	(790,570)
Net increase in amortization of discount/premium on investments	1,975,164	4,993,000
Net decrease in deferred contributions related to expenses of future years	(329,749,761)	(386,763,677)
	<b>(327,774,597)</b>	<b>(381,770,677)</b>
Net change in non-cash working capital balances related to operations [note 10]	2,446,256	506,167
	<b>(325,328,341)</b>	<b>(381,264,510)</b>
Capital		
Purchase of capital assets	(269,457)	(726,535)
Increase in deferred contributions related to capital assets	269,457	726,535
	<b>—</b>	<b>—</b>
<b>INVESTING ACTIVITIES</b>		
Purchase of investments	(1,073,962,943)	(1,238,911,289)
Proceeds from disposal of investments	1,222,143,065	1,447,113,269
	<b>148,180,122</b>	<b>208,201,980</b>
<b>FINANCING ACTIVITIES</b>		
Grants received [note 6]	177,100,000	168,200,000
	<b>177,100,000</b>	<b>168,200,000</b>
<b>NET DECREASE IN CASH DURING THE YEAR</b>	<b>(48,219)</b>	<b>(4,862,530)</b>
Cash, beginning of year	<b>15,146,132</b>	20,008,662
Cash, end of year	<b>15,097,913</b>	15,146,132

See accompanying notes



# Notes to financial statements

March 31, 2016

## 1. Description of business

The Canada Foundation for Innovation (CFI) was incorporated on April 25, 1997, under Part 1 of the Budget Implementation Act, 1997 (Act) for the purpose of making research infrastructure grants to Canadian universities, colleges, hospitals and non-profit research institutions to increase the capability for conducting high-quality research.

Grants received from the Government of Canada and related investment income are administered and invested in accordance with the requirements of the Act and the terms and conditions of the Funding Agreements and the Contribution Agreements between the CFI and the Government of Canada.

The CFI is a non-taxable entity under paragraph 149(1) I) of the Income Tax Act (Canada).

## 2. Summary of significant accounting policies

The financial statements have been prepared by management in accordance with Canadian public sector accounting standards for government not-for-profit organizations and include the following significant accounting policies:

### REVENUE RECOGNITION

The CFI follows the deferral method of accounting for contributions that include grants from the Government of Canada and potential donations from other sources.

Externally restricted contributions and related investment income are deferred and recognized as revenue in the year in which the underlying expenditures are incurred. A receivable is recognized if the amount to be received can be reasonably estimated and collection is reasonably assured.

Externally restricted contributions applied toward the purchase of capital assets are deferred and amortized to revenue on a straight-line basis, at a rate corresponding with the amortization rate for the related capital assets.

### GRANTS TO ELIGIBLE RECIPIENTS

Grants to eligible recipients are recognized as expenses as the disbursements of funds are authorized by management, and all eligibility criteria are met.

### FINANCIAL INSTRUMENTS

The CFI records interest and other receivables, investments and accounts payable and accrued liabilities at amortized cost using the effective interest method of amortization. Cash is measured at fair value. Purchases of investments are recorded on the settlement date.

Financial instruments recorded at fair value are grouped into Levels 1 to 3 based on the degree to which fair value is observable:

- ▶ **Level 1** – fair value measurements are those derived from quoted prices (unadjusted) in active markets for identical assets or liabilities;
- ▶ **Level 2** – fair value measurements are those derived from inputs other than quoted prices included within Level 1 that are observable for the asset or liability, either directly (i.e., as prices) or indirectly (i.e., derived from prices); and
- ▶ **Level 3** – fair value measurements are those derived from valuation techniques that include inputs for the asset or liability that are not based on observable market data (unobservable inputs).

The fair value hierarchy requires the use of observable market inputs whenever such inputs exist. A financial instrument is classified to the lowest level of hierarchy for which a significant input has been considered in measuring fair value.

The financial instrument recorded on the statement of financial position at fair value is composed of cash and is listed as Level 1.

### CAPITAL ASSETS

Purchased capital assets are recorded at cost while contributed capital assets, if any, are recorded at fair value at the date of contribution. Repairs and maintenance costs are charged to expenses. When a capital asset no longer contributes to the CFI's ability to provide services, its carrying amount is written down to its residual value.

Capital assets are amortized on a straight-line basis using the following annual rates and terms:

Leasehold improvements	<b>Term of the lease</b>
Furniture and other equipment	<b>5 years</b>
Computer and software	<b>3 - 5 years</b>
Awards management system	<b>Remaining months to March 2021</b>

Development costs for the CFI awards management system are capitalized and amortized when the new functionalities become operational. Development costs are comprised mainly of professional services.

### USE OF ESTIMATES

The preparation of these financial statements requires the CFI's management to make estimates and assumptions that affect the reported amounts of assets and liabilities and disclosure of contingent assets and liabilities at

the date of the financial statements and the reported amounts of revenues and expenses during the period. Actual results could differ from these estimates. These estimates are reviewed periodically and, as adjustments become necessary, they are reported in the periods in which they become known. The most significant estimates used in preparing these financial statements include assumptions used in determining the collectability of accounts receivable, the estimated useful lives of capital assets and the amount of accrued liabilities.

## 3. Capital management

In managing capital, the CFI focuses on liquid resources available for operations and to be disbursed to eligible recipients. The CFI's objective is to have sufficient liquid resources to continue operating in accordance with the Funding Agreements and the Contribution Agreements between the CFI and the Government of Canada, despite adverse events with financial consequences, and to provide it with the flexibility to take advantage of opportunities that will advance its purposes. The need

for sufficient liquid resources is considered in the preparation of an annual corporate plan, including long-term cash flow projections and budget. Disbursements to eligible recipients and actual operating results are monitored and compared to the cash flow projections to ensure availability of sufficient liquid resources. As at March 31, 2016, the CFI has met its objective of having sufficient liquid resources to meet its current obligations.

## 4. Investments

Investments comprise the following financial instruments:

	Fair value \$	2016 Carrying value \$	Fair value \$	2015 Carrying value \$
Money market funds	96,895,773	96,898,470	166,227,842	166,228,185
Bonds	240,474,312	237,898,775	273,598,968	268,795,643
NHA mortgage-backed securities	134,479,497	134,489,928	245,724,357	245,021,084
High interest savings account	60,602,453	60,602,453	–	–
	<b>532,452,035</b>	<b>529,889,626</b>	685,551,167	680,044,912

### MARKET RISK

#### INTEREST RATE RISK

Interest rate risk arises when the value of an investment fluctuates due to changes in market interest rates.

For the year ended March 31, 2016, if the interest rates on bonds had a 1% increase or decrease with all other variables held constant, the increase or decrease in the interest earned for the year would have been approximately \$2.2 million [2015 – \$3.4million]. The increase or decrease in the interest rate was not calculated for NHA mortgage-backed securities.

#### PRICE RISK

Price risk is the risk that the fair value of a financial instrument will fluctuate because of changes in market prices (other than those arising from interest rate risk),

whether those changes are caused by factors specific to an individual financial instrument or its issuer, or factors affecting all similar securities traded in the market.

As at March 31, 2016, a 1% increase in market price would result in an increase of the fair value for investments of approximately \$5 million [2015 – \$7 million].

The CFI's grant commitments do not exceed the total of its investments, related investment income, and grants committed from the government that will be received in future years. The timing of investment maturities is matched to projected cash outflows. The degree of volatility is mitigated by the CFI's policy that it will not invest in shares, warrants or other equities, convertible debt securities, derivatives, swaps, options or futures. As such, management believes that interest rate and price risks are appropriately managed.

Coupon rates for bonds held to maturity range from 1.80% to 5.50% [2015 – 1.95% to 5.50%]. The rates for mortgage-backed securities range from 1.12% to 4.35% [2015 – 1.55% to 4.35%].

The high interest savings account is a tiered-rate interest account that combines high interest, liquidity and security of a simple deposit account, established for the purpose of investment. The interest rates for this account range from 1.10% to 1.25%.

#### CURRENCY RISK

Currency risk is the risk that the fair value of a financial instrument will fluctuate because of changes in foreign exchange rates. The CFI is not exposed to currency fluctuations.

#### LIQUIDITY RISK

Liquidity risk is the risk of not being able to meet cash requirements in a timely and cost effective manner.

The CFI matches the timing of investment maturities to projected cash outflows and, as such, liquidity does not present a significant financial risk to the CFI.

The maturities of money market funds range between April 2016 and June 2016 [2015 – between April 2015 and June 2015]. Bond maturities range between May 2016 and June 2019 [2015 – between June 2016 and June 2019]. The maturities of mortgage-backed securities range between April 2016 and December 2018 [2015 – between April 2016 and February 2018].

#### CREDIT RISK

Credit risk arises from the potential that the issuer of an investment will fail to perform its obligations. Concentrations of credit risk exist when a significant proportion of investments are invested in securities with similar characteristics or subject to similar economic, political or other conditions.

It is the CFI's policy to invest only in securities with at least AA investment ratings, or the equivalent. As well, the CFI's investment policy restricts the single largest issuer, in the case of all but AAA Government, to a maximum of 1% to 20% [2015 – 1% to 20%] of the total investment portfolio depending on the investment category. As such, management believes that credit risk is appropriately managed.

## 5. Capital assets

			2016	2015
	Cost	Accumulated amortization	Net book value	Net book value
	\$	\$	\$	\$
Leasehold improvements	2,643,834	2,616,391	27,443	71,426
Furniture and other equipment	899,179	875,506	23,673	46,316
Computers and software	1,584,660	1,485,973	98,687	77,053
Awards management system	6,469,782	2,739,670	3,730,112	4,388,344
	<b>11,597,455</b>	<b>7,717,540</b>	<b>3,879,915</b>	<b>4,583,139</b>

Total cost and accumulated amortization related to capital assets held at March 31, 2015 were \$11,327,998 and \$6,744,859 respectively.

## 6. Deferred contributions

The CFI operates under two active Funding Agreements and two Contribution Agreements with the Government of Canada. As at March 31, 2016, the Government of Canada had committed \$6.82 billion in grants to the CFI under these agreements, of which \$4.94 billion had been received. The terms and conditions of these agreements call for remaining grants to be paid to the CFI annually, subject to sufficient appropriation by Parliament, based on the estimated cash requirements for the year. During the fiscal year, the CFI received \$177.1 million [March 31, 2015 – \$168.2 million] related to these agreements.

### EXPENSES OF FUTURE YEARS

Deferred contributions related to expenses of future years represent unspent externally restricted grants received to date, together with investment revenue earned, for the purpose of providing grants to eligible recipients and paying for operating and capital expenditures in future years.

	2016 \$	2015 \$
Balance, beginning of year	699,375,549	917,939,226
Add grants received	177,100,000	168,200,000
Add restricted, investment revenue earned	10,290,170	17,247,749
Less amount recognized as revenue	(339,770,474)	(403,284,891)
Less amount applied toward capital assets acquired	(269,457)	(726,535)
Balance, end of year	546,725,788	699,375,549

### CAPITAL ASSETS

Deferred contributions related to capital assets represent the unamortized amount of restricted grants received and applied toward the purchase of capital assets. The amortization of capital contributions is recorded as revenue in the statement of operations on the same basis as the amortization of the related capital assets.

	2016 \$	2015 \$
Balance, beginning of year	4,583,139	4,647,174
Restricted grants applied towards the purchase of capital assets	269,457	726,535
Less amount amortized to revenue	(972,681)	(790,570)
Balance, end of year	3,879,915	4,583,139

## 7. Commitments

During the year, the CFI approved grants for a maximum amount of \$134.3 million [2015 – \$455.4 million]. Total disbursements to eligible recipients during the fiscal year were \$326.9 million [2015 – \$389.2 million]. As at March 31, 2016, the CFI has approved grants for a maximum amount of \$6,664.7 million, of which \$5,886.2 million had been disbursed. To date, the CFI has award agreements in place related to these approved grants in the amount of \$6,396.9 million and, therefore, has outstanding contractual obligations of \$510.7 million at March 31, 2016.

The CFI estimates these obligations to be disbursed as follows:

	in millions of \$
2017	204.3
2018	132.8
2019	71.5
2020	40.9
2021 onwards	61.2
<b>Total estimated disbursements</b>	<b>510.7</b>

In August 2011, the CFI renewed the lease agreement for its premises at 230 Queen Street (Ottawa, Ontario) for a ten-year period ending July 31, 2021, with option to terminate after five years. The minimum annual lease payment related to these premises is approximately \$1.3 million.

## 8. Restricted contributions and net assets

The requirements of the Budget Implementation Act, 1997, which governs the CFI and the terms of its Funding Agreements and Contribution Agreements with the Government of Canada, externally imposes restrictions on all of the CFI's net assets. Investment revenue to be earned on the grants received from the

Government of Canada is also restricted. Accordingly, the entire net assets of the CFI are deferred and taken into revenue as expenditures are made with no net asset balance outstanding at any time. A statement of changes in net assets has not been prepared since it would not provide additional useful information.

## 9. Pension plan

The employees of the CFI may elect to become members of the Universities Canada Pension Plan, a defined contribution plan managed by Sun Life Financial Inc.

The employer contributions made to the plan during the year ended March 31, 2016, amounted to \$729,201 [2015 – \$686,620].

## 10. Changes in non-cash operating working capital items

	2016 \$	2015 \$
Interest and other receivables	2,205,821	659,425
Prepaid expenses	108,930	32,323
Accounts payable and accrued liabilities	131,505	(163,222)
European Research Area – Canada project deposits	–	(22,359)
	<b>2,446,256</b>	<b>506,167</b>

## 11. Comparative figures

Certain comparative figures have been reclassified to conform to the current year's presentation